

Oak Ridge Documents

No. Date

- 3 2/18/44 Minutes of Advisory Comm. to Medical Section, Rochester
 "New biological problems are presented as fission products and 'product' become available. Info on the biological effects of these materials is urgently needed and these materials are now available in suitable quantity for experimental work.
 s/Stafford Warren.
- 4 8/29/44 Memo - Hempelmann to Oppenheimer Summary of work.
 1. *research program*
 2.
 3. Tracer experiments on humans to determine % of Pu excreted daily. To be done at Rochester.
- 5 none Memo - Stone to Compton
 "Finishing Health Work of Metallurgical Project" should continue health research activities in spite of approaching end of war -- need to provide safe standards for personnel producing Pu -- to be based on experimental data.
 a. Clinton Labs - (animal work) FY46
 b. UC (Hamilton) - metabolism of Pu; toxicity (animal Berkeley work)
 Hamilton - Berkeley (cont'd) 1/11/45 - Crocker Lab
 4) "It is planned here at Berkeley to undertake, on a limited scale, a series of metabolic studies with Pu using human subjects"
 6) "I believe that a few tracer studies both with human subjects and animals...should be made"
 c. Metallurgical Lab - Chicago - Jacobson & Stone FY46
 Studies of acute & chronic radiation effects - external and internal - Pu
 Bone, skin, GI tract, respiratory tract
 "answers to above studies badly needed, etc."
- 8 3/26/45 Hempelmann to Oppenheimer
 MED to help make arrangements for human tracer experiments. Suggest a hospital patient at Chicago or Rochester be chosen for injection with 1-10 µg Pu.
- 9 3/29/45 Oppenheimer to Warren
 Enclosing above memo; endorsing requests outlined; urgency of exposure of workers makes it appropriate that MED consider medical problem more intensively than in past.

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Oak Ridge

- 2 -

10. 4/3-4/45 Conference Summary
Program to be carried out at Rochester.
II(p3) Special problems -- Dr. Bale -- work to be continued in future as in past; consist almost entirely of Dr. Bale and staff work for MED as requested, including tracer studies.
- 24 7/7/45 Hamilton to Stone
Payment to experimental subject - to keep him in Berkeley area and continue collecting samples for analysis.
- 27 Friedell to Area Engineer, Berkeley
Suggest purchase orders for specimens
- 28 8/17/45 Stone - Memo to Files
Re: Warren's memo: Purpose and limitations of the Biological and Health Physics Program.

p.2 - comment about moral responsibility of Univ. of Chicago. Reference to what? What is "D.S.M. Program"?
- 29 9/18/45 Laingham to Warren
Revised plan of Rochester Pu experiment sent to Bale
"of course you and Friedell will have final say"
- 34 1/3/46 Warren
Specific proposals for national distribution of radioisotopes
p. 3 - statement re legal responsibilities for use of experimental material in humans.
Distribution only after approval by competent medical advisors and only to M.D.'s associated with recognized medical institutions.
- 41 4/26/46 Friedell to Warren
Proposed program at Western Reserve University
1. Toxicity of thorium
2. Radiation tissue dosages - internally distributed radioisotopes vs. external radiation.

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- 76 9/19/45 Ltr. Goldring to Langham
Enclosing clinical history of E. C.
- 77 Clinical summary "Experiment I on P4984"
()
- 80 10/2/45 Draft report by Goldring to Ferry, Dist. Engineer, OR
"Biologic & Health Physics Section"
Summary of all research activities at various labs
No mention of human studies
- 84 4/23/46 Hamilton to Howland
Summary of work 15 Oct 42 to 1 April 46 & projected work
to end of FY 47
Comparisons of Pu retention and excretion in rodents
and man discussed (based on data from a "relatively
normal human subject" (p2) - excretory record, tissue
samples including bone)
- 108 5/14/57 Memo to Files by Fidler, Chief, Tech. Info., Field Op.
Policy on Medical Reports
"only those experiments where actual materials were
intentionally introduced into the human system need to
be regarded as secret"
- 94 12/23/46 Draft (corrected) for item 95
- 95 12/24/46 Memo Nichols to Area Engineer, Berkeley
Reference to progress report containing statement about
intravenous injection of humans with certain radioactive
substances "recommends against work on humans but also
denies authority for such work under terms of Manhattan
contract"
- 12/24/46 Memo Brundage to Cooney (Med. Dir., Manhattan Proj., D.C.)
Covering letter for Nichols memo
- 102 1/21/47 Ltr. from E. B. Kelley to Col. Kirkpatrick, AEC, OR
"Visit of Col. Cooney to Berkeley Area"
Proposed human studies discussed with Joe Hamilton. Cooney
appeared to believe these would be satisfactory to AEC but
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to be discussed at meeting in Washington on medical programs

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40-003

CAL 3 - surviving (amputee) excreta collected at Rochester

living in Texas - billing for 2 research patient; from Rochester to ANL July 73

examined at ANL, 6/11/73, (en route to Rochester)

interview, hematology, blood chemistry, X-ray & TB count

examined by Christine Waterhouse - at SMH 6/13 to 6/26/73

summary letter 6/28/73

Letter from Brues to private physician, requesting participation in study
at Rochester - 3/7/73

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40-009

HP-3

Patient of Waterhouse "normal health", lives in Rochester

Hospitalized Rochester 1/28 - 2/18/73

TB measurements by Rundo (ANL) 2/8/73

Bill for research patient sent to ANL

Memo Stehney to Rowland 1/4/73

What Waterhouse wants provided for metabolic study

-- 0000986

40-012

HP-6 Patient of Waterhouse living in Rochester Addison's Disease

Bill for research patient to ANL

6/21 - 7/1/73 at SMH metabolic studies; blood drawn for chromosome studies ~
2/14/73 at SMH

Memo Stehney to Rowland 1/4/73

What Waterhouse wants provided for metabolic study

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40-014

HP8 Female survivor Lives in Rochester - scleraderma

"may be difficult to get for study"

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LEASL Documents

No. Date

1950 Pertaining to follow-up studies of 2 patients

5 X-rays "get them in a completely routine manner"
 Excreta collection and analysis
 Langham, Bassett, Howland, Waterhouse

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Rochester Documents

No. Date

- 1947 Correspondence pertaining to publication of scientific studies
 Langham, Bassett, Bale, Dowdy-Dir. Manhattan Dept. (Rochester)
- 4 2/18/47 Dowdy to Friedell
 ?inclusion of Oak Ridge Patient in write up?
 "It is my understanding that it was your idea and that Major Howland and Cpt. Goldring were the two who actually carried out the administration"
- 9 1/6/48 Memo to Bale from Dr. Blair (*Director, SMH*)
 Human metabolism work under Bassett to be discontinued on order from Shields Warren. Bassett to write history for files.
- 10 6/23/48 Transmittal of Technical Report
 Excretion of U (Human Studies)
 Several authors, including C. Waterhouse

0009090

Personal File of Stehney

<u>No.</u>	<u>Date</u>	
2	12/13/72	Stehney to Rowland - Visit P. Durbin to ANL Need for CHR money for Rochester study "Waterhouse doesn't want to upset people by telling them of their exposure" Could be handled by Rochester Human Use Committee
3	12/21/72	Rowland to Rundo "expect to hospitalize 2-3 low level Pu case in Rochester..." "I intend to write to Rochester to set up this hospitalization as soon as possible..."
4	12/21/72	Rowland to Shultz "outside CHR we <u>never</u> use the word <u>plutonium</u> in regard to these cases." "These individuals are of interest to us because they may have received a radioactive material at some time."
16	1/2/73	Rowland to CHR Staff Members Call Meeting on 1/3 to discuss protocol for examination of living cases in Rochester area when they enter Strong Memorial Hospital
17	1/4/73	Rowland to Waterhouse Confirm arrangements for study -- details "we will pay all expenses" "we can arrange payment -- as an inducement to participate"
21	2/5/73	Littman to Rowland Report on visit to Waterhouse "The Dean has approved participation of Dr. Forbes who will cooperate with Dr. Rundo"
30	12/14/73	Stehney to Fry Report to ANL Human Use Committee
36	3/1/74	Rowland to Waterhouse info that data will be presented --offer to be author on paper

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- 37 Waterhouse to Rowland
 Agrees with submission of abstract
 requests that "U. of Rochester not be implicated in
 this study for the time being", declines coauthorship.
 Alludes to discussion with Dean and Bill Neuman re AEC
 resolution of this matter
- 38 3/13/74 Rowland to Fry
 Supplies copies of correspondence with Waterhouse as
 requested.
- 40 4/5/74 Stehney to Sinclair
 Supplies copies of correspondence with Waterhouse as
 requested.
- 42 1/16/45 (p3) Project Council Meeting
 Dr. Stone (after presentation of i.v. Pu in dog)
 "Does the above data have any implications regarding
 the value of various types of tests which might be
 performed on humans?"
 Dr. Nickson - urine, stools, blood assays planned
- 45 June 46 (p2) Biochemical Survey - Monthly Report
 Ingestion of Pu solution by 6 people

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DBM Documents

~~Only~~ No. 1 relates to human experiments with isotopes -- possibly not to Pu

- 15 "A report of the past, present, and future research activities for Project 48-A-1" by J. G. Hamilton 9/12/47

(Pu and several fission products)

All metabolic studies in rats, with the exception of 1 human tracer experiment, using Pu. Summary of results - no specific reference to human data.

Under "projected work, FY 1948-49" (p. 9)

Human tracer studies with certain of the fission products and fissionable elements. Purposes: (1) to establish metabolic behavior in man and compare to rat (using relatively short-lived isotopes); (2) to investigate potential therapeutic and diagnostic applications (in collaboration with Dr. R.S. Stone at Univ. of Calif. Medical School).

- 18 Memo from Joe Howland to Henry A. Blair (Director, Strong Mem. Hosp.) 1/3/49

"Dr. Shields Warren's request for information concerning the clinical metabolism ward"

Tabulation of pt's studied in 1948 (names, dates, diagnosis, lab tests performed)

Only familiar name found:

2/8-2/21 Addison's Disease
(no lab tests listed)
(not identified - as were some patients - as "AEC interest")

Atlanta Documents

No. Date

- 21 12/2/44 Memo to files - S. L. Warren
 "Medical Experimental Program on Ra & Pu"
 outline of ongoing research, mostly in rats.
 The following data are urgently needed.
 c. Tracer experiments in humans -- ratios of blood
 level to urine & fecal excretion following
 intravenous injection of Pu (Bale, Hempelmann,
 Cole)
 Meeting in Chicago Dec. 4 & 5 with all involved to plan.
- 27 1/19/45 Memo to Files/Friedell
 "Program for Product Research 5 December 44"
 Analytical Methods
 Animal Metabolism Studies & Data (rat)
 "In conjunction with the experimental conducted in animals,
 it is expected that on selected human subjects tracer
 studies with Pu would be made. The purpose of this would
 be to establish a relationship between the amount excreted
 and the amount retained in the body. This could serve as
 an excellent monitoring index to determine hazards to
 personnel. This is of course predicated on the idea that
 some conclusion as to the tolerance level of Pu in the body
 will be established from the experimental outlined above."
- Attendance - as suggested by previous memos Nos. 18 & 21 -
 Friedell, Bale, Cole, Warren, Hempelmann, Mastick (Los
 Alamos), Hamilton, Stone
- 41 4/4/45 Ltr. Langham to Friedell
 Shipment of 5 mg Pu, detailed instructions for preparing
 solution, injection, collection and shipment of excreta.
 attached "Protocol of Clinical Experiment"
 (written after administration of Pu by Friedell) see No. 43
- 42 4/6/45 Ltr. Langham to Friedell
 With still more explicit instructions than above
- 43 Ltr. Friedell to Hempelmann
 Encloses protocol (as in No. 41) "Everything went very
 smoothly"...I think we will have access to considerable
 clinical material here and we hope to do a number of
 subjects..."

-0000094

- 59 "Santa Fe Conversations" "JWH"
No date, but references to letters and conversations
21 May, June 2, 4 and 4-9. (Warren, Langham, Hempelmann,
McKana, Friedell)
Points under debate:
a. Number of patients on which to use product
b. Size of dose
c. Significance of Pu+4 and Pu+6; soluble & insoluble
forms
d. Factors related to absorption from skin
e. Factor about urinary excretion -- difference
between urinary and stool excretion (reference to
Chicago and Oak Ridge patients)
f. Distribution of Pu in tissues of humans should be
carried out in moribund patients or patients dying
from malignancy particularly Hodgkin's & leukemia
in young people.
Proposed experimental program
Injection of 0.06 mg/kg into 10 patients with blood and
urine status normal for age.
Follow-up levels in blood, urine, stools for up to
levelling off state which occurs within 8 wks-2 mo.
Biopsies of bone if possible
Tissue distribution in moribund patient
Skin excretions with 238-239.
- 65 Detailed duty descriptions June-July 45
Ferry, Friedell, Bryan, Goldring, Howland
- 68 7/12/45 Memo Howland to Area Engineer, Berkeley
Re: Hamilton's concern that "experimental subject" may
move out of area unless some compensation be made to him.
- 70,71 8/9/45 Ltrs. Stone to Friedell
Re: concern about informing public about radiation hazards
to MED workers: Japanese
- 72 Proposed Health Program for FY 46 (outline)
for Berkeley group (Hamilton)
mentions injection experiments, including tracer
studies in humans using 48
- 75 9/5/45 Report of meeting in Rochester (by Langham)
Detailed plan for Pu tracer study
Revised plan resulting from meeting
Outline of all details -- clinical, administrative,
scientific, etc.
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No mention of informing patient

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- 105 4/28/47 Ltr. from Friedell to Maj. Clarkson, AEC, OR
"don't remember man's name who received some of the material -- there are records in the files -- "Joe Howland actually gave the material and he might remember, etc."
- 106 2/6/47 Ltr. Carroll Wilson, GM, AEC to Warren
Re Opinion of Interim Medical Advisory Committee on Clinical Testing -- legal department to investigate responsibility of AEC
- 107 4/30/47 Ltr Wilson to Warren
"All Area Managers will be notified about contents"
Opinions of Commission re approved clinical testing
a. treatment to be given only when there is expectation that it will benefit patient
b. decision of advisability to be made by attending physician
Same procedure to be followed as agreed upon early March--
"susceptible to proof from official records that, prior to treatment, each individual patient, being in an understanding state of mind, was clearly informed of the nature of the treatment and its possible effects, and expressed his willingness to receive the treatment..."
no written release required but 2 doctors to certify in writing (and made part of official record) to patient's understanding state of mind of explanation furnished and willingness to participate.

105 5/14/47

see p. 3

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